



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/639,962	08/16/2000	Wilhelm Frank	GR 97 P 2065 D	6118
24131	7590	04/14/2005	EXAMINER	
LERNER AND GREENBERG, PA P O BOX 2480 HOLLYWOOD, FL 33022-2480			DOUGHERTY, THOMAS M	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/639,962

Applicant(s)

FRANK ET AL.

Examiner

Thomas M. Dougherty

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 6-9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Crawley et al. (US 4,471,256). Crawley et al. show (fig. 3a) a piezoelectric (see title) assembly, comprising: an elastic hollow body (not numbered, note hollow body bending in figs. 5A-5C) with an elasticity; a top cover plate (51a) connected to said hollow body by one of welding (col. 4, ll. 30-34) and flanging, and a bottom cover plate (52b) connected to said hollow body; and a piezoelectric actuator (52) with a permanent and fixed prestress (col. 4, ll. 36-40) said piezoelectric actuator being contacted by said hollow body, said top cover plate, and said bottom cover plate.

The elasticity of the hollow body is matched to a desired manner of operation of said piezoelectric assembly. Again see figs. 5A-5C.

Said piezoelectric body (52) has an extension direction and is inserted into said hollow body in said extension direction between said cover plates (51a, 52b) for prestressing said actuator. Again see col. 4, ll. 36-40).

Prestress of said piezoelectric actuator (52) corresponds with said elasticity of said hollow body.

Art Unit: 2834

Said piezoelectric actuator has a shape and said hollow body is matched in shape to said shape of said piezoelectric actuator (52).

Claims 1, 2, 5, 6, 8 and 9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ohnishi (JP 55-134990). Ohnishi shows (figs. 1-3) a piezoelectric (see title) assembly, comprising: an elastic hollow body (6) with an elasticity; a top cover plate (4) connected to said hollow body by one of welding and flanging (note that cover plates each have a brim or a flange for enclosure stability in the hollow body), and a bottom cover plate (5) connected to said hollow body (6); and a piezoelectric actuator (1,1') with a permanent and fixed prestress ((see translated CONSTITUTION, II. 4-5), said piezoelectric actuator (1,1') being contacted by said hollow body (6), said top cover plate (4), and said bottom cover plate (5).

Said hollow body (6) has a given length, two butting edges (6e) and at least one connecting seam (defined by contact between the two 6e surfaces) connecting said two butting edges (6e) to one another and extending entirely over said given length.

Said hollow body (6) is made of at least one plate formed into said hollow body and then fixed by at least one connecting seam.

The elasticity of the hollow body (6) is matched to a desired manner of operation of said piezoelectric assembly. This has been noted by the Board of Appeals as inherent.

Said prestress of said piezoelectric actuator corresponds with said elasticity of said hollow body (6). This is regarded as inherent.

Said piezoelectric actuator has a shape and said hollow body is matched in shape to said shape of said piezoelectric actuator (1, 1').

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi (JP 55-134990) in view of Crawley et al. (US 4,471,256). Given the invention of Crawley as noted above, he does not show a seamed hollow body.

As noted above, Ohishi shows all claimed features in these claims.

It would have been obvious to one having ordinary skill in the art to employ the casing design of Ohishi in the device of Crawley et al. at the time of the invention since this is clearly a way to insure an insulated device as Ohishi notes. Such a design would reduce the likelihood of unintentional and undesirable short circuits due to particulate matter.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi (JP 55-134990) or Crawley et al. (US 4,471,256) further in view of Kaji (US 4,354,131). Given the combined invention of Ohishi and Crawley as noted above, they do not show their hollow body with two butting edges associated with one another and disposed in the longitudinal direction wherein the butting edges are not connected to one another.

Art Unit: 2834

Kaji shows (figs. 1 and 20 a piezoelectric (col. 3, ll. 37-39) assembly, comprising: an elastic hollow body (49). He further shows said hollow body (49) having a longitudinal direction and two butting edges associated with one another and disposed in said longitudinal direction, said butting edges not being connected to one another.

He does not show a top cover plate connected to said hollow body, or a bottom cover plate connected to said hollow body. His piezoelectric actuator does not have an extension direction, said actuator is not inserted into said hollow body in said extension direction between said cover plates for prestressing. It would have been obvious to one having ordinary skill in the art to employ a hollow body such as is shown by Kaji in a device like Crawley's or Onishi's at the times of their inventions, in order to allow for electrical connections through the gap created by the two non-connected butting edges in the housing such as is taught by Kaji at col. 4, lines 37-45.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

tmd

April 12, 2005


TOM DOUGHERTY
PRIMARY EXAMINER